

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554**

<b>In the Matter of</b>	)	
	)	
<b>Request of PTC-220, LLC for Waivers of</b>	)	<b>WT Docket No. 08-256</b>
<b>Certain 220 MHz Rules</b>	)	
	)	
<b>Construction Progress Report</b>	)	

**To: Chief, Wireless Telecommunications Bureau**

**PTC-220, LLC  
CONSTRUCTION PROGRESS REPORT**

**I. INTRODUCTION**

PTC-220, LLC (“PTC-220”) submits this Construction Progress Report to satisfy the requirements of paragraph 16 of the Memorandum Opinion and Order (“*2009 Waiver Order*”) adopted by the Federal Communications Commission (“FCC”) on June 25, 2009.<sup>1</sup> This Report details the progress made during the past six months in implementing the Systemwide Build-out Plan (the “Build-out Plan”) submitted by PTC-220 on November 1, 2010 in the above-referenced docket. The Build-out Plan explained how PTC-220’s 220 MHz licenses (“Licenses”) would be used in deploying a nationwide positive train control (“PTC”) system, as required by Federal statute.<sup>2</sup> The construction of the Licenses will be undertaken in large part by each of PTC-220’s

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<sup>1</sup> *Request of PTC-220, LLC for Waivers of Certain 220 MHz Rules*, Memorandum Opinion and Order, 24 FCC Rcd 8537 (2009).

<sup>2</sup> In October 2015, Congress extended the PTC implementation deadline from December 31, 2015 to December 31, 2018. *See* Positive Train Control Enforcement and Implementation Act of 2015, Pub. L.

member railroads,<sup>3</sup> although PTC-220 will also coordinate construction activities by non-member railroads.

## **II. SITE BUILD-OUT ACTIVITY**

Since the May 1, 2017 Report,<sup>4</sup> PTC-220's member railroads have continued to build new or prepare existing base station sites and install base station radios. As before, preparatory work at existing sites includes, among other things, coverage predictions, design and installation of antenna systems, upgrading of site power systems, site pre-wiring, and backhaul design. The table below indicates the progress to date for each PTC-220 member railroad, by state, for base station site preparation and base radio installations. Some of the installed radios are being actively used in various field testing programs, while others are currently powered off, awaiting final frequency coordination.

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No. 114-73 § 1302, 129 Stat. 568 (2015) ("*2015 PTC Act*"); 49 U.S.C. § 20157(a)(1). In light of the new statutory deadline, PTC-220 in December 2015 filed requests for a further extension of its substantial service deadlines until December 31, 2018. The FCC granted these requests in March 2016.

<sup>3</sup> PTC-220's members are BNSF Railway ("BNSF"), Canadian National Railway ("CN"), Canadian Pacific Railway ("CP"), CSX Transportation ("CSX"), Kansas City Southern Railway ("KCS"), Norfolk Southern Railway ("NS"), and Union Pacific Railroad ("UP").

<sup>4</sup> *Request of PTC-220, LLC for Waivers of Certain 220 MHz Rules*, PTC-220, LLC Construction Progress Report, WT Docket No. 08-256 (May 1, 2017).

State	BNSF		CN		CP		CSX		KCS		NS		UP	
	Site Prep	Radio	Site Prep	Radio	Site Prep	Radio	Site Prep	Radio	Site Prep	Radio	Site Prep	Radio	Site Prep	Radio
AL	4	4	2	0			48	47			45	45		
AR	7	6							9	9			28	28
AZ	21	21											13	13
CA	39	39											108	108
CO	21	21											59	59
FL							25	23			2	2		
GA							32	28			40	40		
IA	26	26	13	0	23	23							26	26
ID	5	5											24	24
IL	42	41	37	29	6	5	27	25	5	5	26	26	52	52
IN			3	3			50	46			30	30		
KS	38	38							3	3			36	36
KY			3	3			82	80			14	14		
LA	6	6	7	6			1	1	29	29	2	2	22	22
MA							16	16						
MD							39	36			3	3		
MI			18	18			16	11			5	5		
MN	36	36	7	5	27	17							3	3
MO	41	41			7	7			14	14	7	7	30	30
MS	3	3	26	14			3	3	12	12	11	11		
MT	67	67												
NC							43	43			27	27		
ND	54	54			15	14								
NE	32	32											38	38
NJ							6	6						
NM	16	16											15	15
NV													58	58
NY					14	13	66	60			4	4		
OH			1	1			69	67			32	30		
OK	26	26							6	6			10	10
OR	13	9											81	81
PA							61	60			70	39		
SC							49	49			22	22		
SD	10	10												
TN	2	2	6	6			64	60			30	30	1	1
TX	58	58							25	25			136	136
UT													39	39
WA	53	53											18	18
WI	3	3	21	20	15	14							15	15
WV							104	103			9	9		
WY	1	1											28	28
VA							68	63			33	33		
<b>Total</b>	<b>624</b>	<b>618</b>	<b>144</b>	<b>105</b>	<b>107</b>	<b>93</b>	<b>869</b>	<b>827</b>	<b>103</b>	<b>103</b>	<b>412</b>	<b>379</b>	<b>840</b>	<b>840</b>

Totals	
Site Prep	Radio
3,099	2,965

In addition to the base station deployment programs, PTC-220 member railroads are installing mobile radios in their locomotive fleets.

Although the number of installed radios has expanded since the last report, PTC-220 members continue to look for means to expedite deployments. Working through the Association of American Railroads, members filed comments in the pending wireless infrastructure proceeding urging the FCC to categorically exclude all railroad wireless infrastructure from Section 106 review, which would further accelerate certain PTC infrastructure deployments.<sup>5</sup>

### **III. SPECTRUM**

#### **A. Interference Resolution**

As previously reported, the two different PTC technologies, I-ETMS (used by freight railroads) and ACSES (used by passenger railroads) have the potential to desensitize each other's receivers, creating harmful interference when the two systems are operated in close geographic and spectral proximity. PTC-220 identified greater Philadelphia and New England as the two areas along the Northeast Corridor where this interference scenario was predicted to be a serious problem. PTC-220 has worked for the past two years on solutions to create greater spectral separation between the two PTC technologies in these areas.

*Philadelphia Area.* The resolution of the interference situation in the Philadelphia area has been completed. As previously reported, PTC-220 acquired 218 MHz Service license

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<sup>5</sup> See Comments of the Association of American Railroads, WT Docket No. 17-79 (filed June 15, 2017) at 14-15.

KIVD0007 and, after obtaining a license modification from the FCC to alter the geography of the license, partitioned and assigned the spectrum to the Southeastern Pennsylvania Transportation Authority (“SEPTA”) and to New Jersey Transit (“NJT”). Both transactions have closed.

New England. Significant progress has been made in the past six months. After the FCC resolved a contested renewal of the underlying license, PTC-220 was able to complete its third transaction to acquire a sufficient quantity of 217 MHz (AMTS) spectrum in the greater Boston area to satisfy the PTC needs of the two railroads in this area, Amtrak and the Massachusetts Bay Transportation Authority (“MBTA”), holding 220 MHz licenses. In addition, PTC-220 closed on its transaction to clear the incumbent site-based AMTS licensee from the spectrum. After obtaining and clearing the needed spectrum, PTC-220 entered into contracts with Amtrak and MBTA to assign them the 217 MHz spectrum in exchange for their 220 MHz licenses and filed applications for the mutual assignments with the FCC. The Amtrak applications were recently granted; the MBTA applications are currently pending.

## **B. Chicago Spectrum Capacity**

Chicago has the densest concentration of railroad traffic in the country and thus presents the most complex RF planning environment for PTC. With some 11 railroads expecting to rely on PTC-220’s spectrum in the greater Chicago area, PTC-220 recognized early on that the density of rail traffic in Chicago would require additional spectrum and for that reason in 2013 acquired all suitable 220 MHz spectrum available for purchase in the Chicago area.<sup>6</sup> Even with this additional spectrum, however, PTC-220’s engineers at TTCI are struggling to develop a workable RF channel plan for Chicago. The plan currently includes 98 base stations and 1,130

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<sup>6</sup> Because the I-ETMS technology used by the freight railroads requires 25 kHz channels, 220 MHz licenses consisting of non-contiguous 5 kHz channels cannot be used.

individual wayside stations that need to be accommodated on PTC-220's spectrum within the Chicago BEA. Although efforts continue on the plan, the remaining available spectrum in Chicago will be consumed as PTC deployment continues. For this reason, PTC-220 is reviewing potential strategies for obtaining additional spectrum in this area, although PTC-220 is aware of no 220 MHz spectrum currently available for purchase in the secondary market.

### **C. Non-Member Spectrum Leases**

PTC-220 currently has active spectrum manager leases with several non-member railroads including CalTrain, MetroLink, North Country Transit District, Metra, Sound Transit, and the Terminal Railroad Association of St. Louis. Dallas Area Rapid Transit and the South Florida Regional Transportation Authority have entered into sublease arrangements with PTC-220 members BNSF and CSX, respectively. In addition, Amtrak and Metro North testing leases will be further extended, and Conrail will be moving from a testing lease to a full lease. Two other non-member railroads are currently considering leasing arrangements with PTC-220, and PTC-220 anticipates possible future negotiations with other non-member railroads. Some short-line railroads may also need a long-term spectrum lease, depending on the PTC requirements of their owned track.

#### IV. CONCLUSION

During the past six months, PTC-220 has continued to focus on resolving the final spectrum issues along the Northeast Corridor. PTC-220 is pleased that, with the FCC's assistance, the interference situation in Philadelphia has been resolved and the parties are well positioned to close the remaining transactions in New England within the coming months. PTC-220 is now turning its attention to the Chicago area, where RF channel planning is proving to be a challenge given the density of rail operations, suggesting that additional 220 MHz spectrum may be needed in the near future.

Respectfully submitted,

/s/ Kim Simmonds

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